



UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/804,909	02/25/97	TZANNES	6008/54140

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18 CROW CANYON COURT
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LM02/0831

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EXAMINER

TRAN, K

ART UNIT	PAPER NUMBER
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2731

DATE MAILED: 08/31/98

08/31/98

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/804,909

Applicant(s)

TZANNES et al

Examiner

KHAI TRAN

Group Art Unit

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☒ Responsive to communication(s) filed on Feb 26, 1997

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-3 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-3 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1:

lines 7-8, the term "the value of one of the symbols" lacks antecedent basis.

line 10, the term "said modulated carrier " lacks antecedent basis.

As per claim 2:

line 2, the term "said value" lacks antecedent basis.

line 3, the term "said non-leaf nodes" lacks antecedent basis.

As per claim 3:

line 2, it is not clear how M time-domain samples are produced in the transmitter.

lines 5-6, the term "the root node" lacks antecedent basis.

line 8, the term "a common input" is vague and indefinite.

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Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow et al (U.S. Pat. 5,479,447).

As per claim 1, Chow et al disclose a communication system for sending a sequence of symbols on a communication link as shown in Fig. 1 comprising a communication channel (26) for transmitting the sequence of symbols; a clock for defining successive frames (e.g., bits are grouped into blocks such as frames, see col. 1, lines 27-30); a modulator (a multicarrier modulator 16) for modulating each of M

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carrier signals with a signal related to the value of one of the symbols thereby generating a modulated carrier signal and for generating a sum signal comprising a sum of the modulated carrier signals (see Fig.1). Chow et al fail to disclose an output circuit for transmitting the sum signal on the communication link, wherein the carrier signals comprise first and second carriers in which the first carrier having a different bandwidth than the second carrier. However, Chow et al disclose that the multicarrier modulation is known as a Discrete Multitone (DTM) modulation, therefore, the carriers have different bandwidth. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have different bandwidth in the modulated carrier signals in order to select a desired symbol of the sequence of symbols. The motivation would reduce noise signals and increase speed of transmission signal in the communication system.

As per claim 2, Chow et al fail to explicitly disclose the modulator comprising an array of filter banks having M leaf nodes, each of the values related to the symbols forming an input to a corresponding one of the leaf nodes. However, Chow et al disclose a filter (44) in the modulator for filtering signals as shown in Fig. 5b, since the values of symbols being sampled in the modulator and transmitted to the filter (44). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include an array of filter banks in the modulator in order to make signals smoother and clearer.

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As per claim 3, Chow et al also disclose the communication system further comprising a receiver having an input circuit for receiving and storing time-domain samples transmitted on the communication link (see Fig. 5b, for a receiver), a decoder (58) for recovering the M symbol values, a sub-band filter bank (52) comprising a plurality of FIR filter having a common input for receiving an input time-domain signal, each the filter generating an output signal representing a symbol value in a corresponding frequency band (col. 2, lines 56-67, and col. 3, lines 1-12).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Eyuboglu et al (U.S. Pat. 5,048,054) disclose a line probing modem for receiving data from a remote device over a communication channel by using a single carrier modulated signal.

Hess et al (U.S. Pat. 5,170,413) disclose a control strategy for reuse system assignments and handoff.

Wei (U.S. Pat. 5,243,629) discloses a multi-subcarrier modulation for HDTV transmission.

Chow et al (U.S. Pat. 5,285,474) disclose a method for equalizing a multicarrier signal in a multicarrier communication system.

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5. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-5403, (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Khai Q. Tran whose telephone number is (703) 305-

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1876. The examiner can normally be reached on Monday-Thursday from 9:00 AM to 5:00 PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4900.

Kt

Khai Q. Tran

August 19, 1998

Chi H. Pham

CHI H. PHAM
SUPERVISORY PATENT EXAMINER
GROUP 2700

8/25/98